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Federal Communications Commission
Office of Secretary

**Via Hand Delivery**

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: **WC Docket No. 04-36 (IP-Enabled Services)**
**WC Docket No. 03-266 (Level 3)**
**WC Docket No. 01-92 (Intercarrier Compensation)**

Dear Ms. Dortch:

On February 3, 2005, the Voice on the Net Coalition, represented by Jim Kohlenberger, VON Coalition Executive Director; Glenn Richards, Shaw Pittman, Counsel to the VON Coalition; Margie Dickman, Intel; Kecia Lewis, MCI; Robert Koppel, Texas Instruments; Jonathan Askin, pulver.com; Cindy Schonhaut and John Nakahata, Level 3; Todd Daubert, David Montanaro, and Lynn Hartrick, USA Datanet; Kate Cronin and Wayne Fonteix, AT&T; Ray Paddock, Intrado; Dave Baker, Earthlink; Paula Boyd, Microsoft; Praveen Goyal, Covad; and Linda Cicco and Jill Cocayne, BT Americas, met separately with FCC Commissioner Kathleen Abernathy and legal advisor Matt Brill, FCC Commissioner Jonathan Adelstein and legal advisor Scott Bergmann, FCC Commissioner Michael Copps and legal advisor Jessica Rosenworcel, FCC Commissioner Kevin Martin and senior legal advisor Dan Gonzalez, and Christopher Libertelli, Chairman Powell's legal advisor. At the meetings, the VON Coalition members expressed their support for a grant of the Level 3 petition and for an intercarrier compensation regime that is geographically neutral and uniform on a national basis. The members also discussed the progress that has been made with E-911 services offered by VoIP providers. Copies of the materials distributed at the meeting are attached. Please direct any questions regarding this matter to the undersigned.

Very truly yours,

Glenn S. Richards

cc: Commissioner Kathleen Abernathy
Commissioner Kevin Martin
Commissioner Jonathan Adelstein

Commissioner Michael Copps
Scott Bergmann
Matt Brill
Jessica Rosenworcel
Dan Gonzalez
Christopher Libertelli,

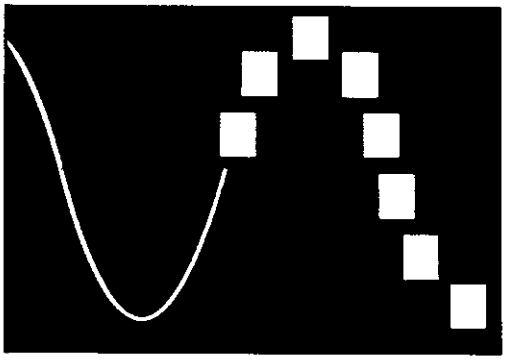
Document #: 1459404 v.1

# Voice on the Net Coalition

*The voice for Internet voice innovation and the policy framework that enables it*

## UNLEASHING THE FULL PROMISE AND POTENTIAL OF INTERNET VOICE COMMUNICATION

*Vast benefits: lower prices, better jobs, and improved ways to communicate*



# UNLEASHING THE PROMISE OF INTERNET VOICE COMM
## ACCELERATING CONSUMER BENEFITS WHILE AVOIDING THE NEED FOR LEGACY REGULATION

*The Voice on the Net (VON) Coalition*

Over the last two decades, Internet innovations like e-mail, the world-wide-web, and e-commerce have unleashed powerful transformations that that have changed almost every aspect of our lives, grown our economy, and increased our standard of living. On the horizon are a new wave of Internet based voice advances that promise to make talking more affordable, businesses more productive, jobs more plentiful, and the Internet more valuable.

Innovators around the globe are pumping out promising new voice applications that use high-speed Internet to deliver old services in fundamentally new ways. They are on the road to a dramatic transformation in the way we communicate – converging Internet text, voice and video in entirely new ways. At the forefront of this revolution is a new generation of Voice over the Internet (VoIP) advancements that harness the power of the Internet to transform the way we can talk.

To help promote this future, the nation's leading VoIP companies, on the cutting edge of developing and delivering voice innovations, have come together to advance regulatory policies that enable Americans to enjoy the full promise and potential of VoIP. The group of companies who make up the Voice on the Net or VON Coalition, believe regulators should refrain from applying traditional telephone regulations that could stall consumer benefits, while industry and government find new solutions and ways to address important concerns without imposing legacy telephone regulations to VoIP.

The VON Coalition includes AT&T, BMX, Callipso, CallSmart, Convedia, Covad, IceNet, iBasis, Intel, Intrado, MCI, Microsoft, PointOne, Pulver.com, Skype, TeleGlobe, Texas Instruments, VocalData, and Voiceglo. Together they believe that American's are fundamentally better off with a generally hands off regulatory approach to Internet and Internet based services like VoIP. Since its inception, the VON Coalition has consistently advocated that federal and state regulators maintain current policies of refraining from extending legacy regulations to Internet services, including VoIP. More information about the VON Coalition can be obtained at the following website: http://www.von.org.

The Coalition understands that VoIP is and can continue to deliver important benefits including:

- dramatic cost savings for consumers
- reduced operational costs for providers
- innovative new features for users
- increased competition for communities
- greater infrastructure investment
- accelerated broadband deployment
- improvements in emergency services
- lower cost communications for rural America and government users
- increased access for persons with disabilities, and
- increased productivity for our economy.

The potential for a vast new wave of VoIP-led technological innovation is here. But in order to unlock the vast new productivity, economic growth, and consumer benefits that lie ahead, policymakers need to help overcome a set of emerging policy challenges and nurture future innovation. To achieve these many benefits, the FCC, Congress, and the states need only maintain their successful hands off approach to regulating all forms of Internet communications.

The VON Coalition asks policymakers to classify VoIP as unregulated information services subject exclusively to federal jurisdiction. The Coalition acknowledges that there are important social policy issues where the FCC and state regulators have a legitimate role. But the companies believe these issues can be more effectively addressed without imposing heavy handed legacy telephone regulations to innovative Internet voice communications. For example, the VON Coalition supports efforts to address critical issues like the availability of 911 emergency services and disability access through voluntary and other efforts that that don't require imposing heavy regulation that could stifle voice innovations.

**VoIP Innovation can be:**
- ✓ a force for increased competition
- ✓ a platform for innovation
- ✓ a driver of broadband deployment
- ✓ a vehicle for consumer benefits, and
- ✓ an enabler of economic growth

With respect to Universal Service, the Coalition favors reforming the Universal Service Fund to ensure its sustainability through a system of fair contributions from all providers through either a telephone number-based or connection based contribution system. Likewise, as a way to ensure fair compensation for carriers, the group favors an overhaul of the outmoded inter-carrier compensation regime which is now a hodgepodge of implicit subsidies.

This paper previews a vision for a new communications future and the Internet voice technologies that can drive it. It provides key insights into the breakthrough voice applications that will unleash the next wave of Internet innovation -- its benefits and challenges - and outlines the concrete steps that policymakers must take to realize its potential.

## How VoIP is Revolutionizing Communications

The technology behind VoIP works very much like e-mail. Rather than connecting directly over a single dedicated open circuit, the data is sent over the Internet in packets of data and reassembled on the receiving end. Because voice data packets can be interspersed between other e-mail and web page traffic on the Internet, the process doesn't use as much bandwidth and makes phone calls essentially as cheap to transmit as e-mail.

The combination of "IP" and "voice" completely changes the nature of voice from a simple utility service into a multifaceted information application just like e-mail, instant messaging, and video conferencing. The Internet changes voice communications into a software application allowing voice to be programmed, transformed, and converged in entirely new ways. It also allows voice communications to be integrated into almost any type of device, application or service that uses a microprocessor or touches the Internet.

Sending voice over IP networks makes all of this device diversity possible. IP blurs the functional distinctions between applications and devices: a computer can become a phone, a Wi-Fi handset can become a global intercom; web pages can become voice portals; and instant messenger software can become voice and video chat applications. As with other Internet traffic, IP renders distance irrelevant for voice traffic and makes phone numbers location independent.

**VoIP is Not Traditional Telephony**

VoIP is not another flavor of telephone service. It's a new frontier in communications for individuals and businesses alike. Until now, the limitations of technology have tied voice directly to a specific kind of physical network. The voice service and the physical infrastructure were one and the same. But the IP network decouples Voice from the copper telephone network, making it also potentially available on cable, fixed wireless, fiber, satellite and any other place IP is available.

**VoIP is Delivering Real Benefits:**

- ✓ Speeding new innovations to consumers and businesses
- ✓ Giving Americans more communications choices than ever before
- ✓ Driving vigorous new investment in the network and restoring vitality to the telecom sector

Voice is simply another application being deployed on the Internet, often in combination with other applications. These applications are possible, in part, because the Internet offers openness, thereby encouraging innovation. In contrast, the PSTN operates as a closed system on which it is impossible for innovative developers to build new applications. The failure of Advanced Intelligent Networking illustrates the problem of closed systems impeding the development of innovative products and services. The Internet permits entrepreneurial firms to develop new hardware and software applications that can seamlessly fit into the network. As computer processing power increases, IP-enabled products and services are poised to make communications more innovative, affordable, and universal.

People are adopting VoIP not just because it offer enormous consumer savings, but because it also provides innovative new features such as the ability to access voicemail from your e-mail, to conference large groups of people together, to select which area code your telephone will use, or to use your phone extension anywhere there is an Internet connection. In fact, once converted into IP, voice can be integrated with any number of software and data applications. This means rich new possibilities for innovators, businesses and consumers alike.

One new kind of VoIP service allows anyone with a broadband connection to plug their phone into a broadband router and make calls over the Internet. Entrepreneurs, such as Vonage, IceNet, PointOne, Voiceglo, and even AT&T have begun offering innovative voice applications to residential and small business consumers who have broadband connections including unlimited local and long-distance calling and on-line call logs. Vonage, for example, recently announced a package of unlimited local and long distance calling for $29.99 per month.[1]

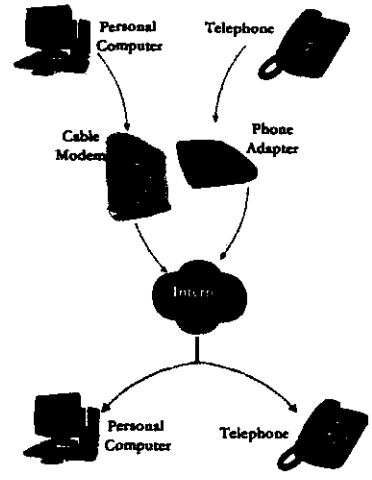
Some innovative VoIP services originate and terminate on the traditional telephone network, but are only possible though use of an advanced IP communications network and are not possible or practical with use of only the legacy circuit-switched

[1] Vonage's service offerings are available at http://www.vonage.com/rate.php

network. For instance, PointOne's Star (*) Call IP service provides users with access to real-time information such as stock quotes and driving directions, the ability to communicate with IM, as well as other advanced features. The service is available during every voice communications session on the PointOne network. Users access this information by "dialing" a predefined key combination at any point during a "call" during which time the other user is placed on hold. When the user is done accessing this feature, the call is rejoined.

With Free World Dialup ("FWD") 3.0 or Skype software, users of different broadband technologies (cable, DSL, Ethernet, satellite, etc.) can place calls over the Internet to other users of the same software without ever accessing the PSTN. Unlike a traditional calling arrangement in which long distance calls generate usage-sensitive charges, FWD and Skype subscribers use a broadband connection and VoIP capability to make calls almost for nothing[2].

**Advantages of IP Voice over Traditional Phone Circuits**



*Source:FCC*

The Internet and other IP networks offer an inherent efficiency, reliability, and functionality for communications, particularly those that combine different kinds of data, including digital voice traffic. The conventional circuit-switched phone network or PSTN works on the model that each customer's equipment must have a continuous connection (a "circuit") to a telephone company switch, whether or not the connection is actually in use. For long-distance services, a continuous circuit must be established and maintained between each pair of users for the duration of a call, regardless of the amount of information sent through that path. By contrast, the Internet trades increased use of computer processing for a decreased use of transmission facilities and automatically re-routes packets around problems such as malfunctioning routers or damaged lines, without relying on a separate signaling network. As the cost of computer processing continues to decrease and the demand for communications bandwidth by consumers increases, IP networks increasingly offer a more economical and robust means for providing communication connections.[3] Moreover, unlike the PSTN, where service providers must either build their own or rely on the incumbents' infrastructure, the Internet allows new competitors to swiftly emerge because they do not need to own or construct any infrastructure.

## IP-Enabled Services

The development of IP-enabled services, including VoIP, is having a profound and beneficial impact on the United States and the world. Below are just some of the benefits of IP-enabled services.

[2] Similar to the cost of e-mail, consumers must pay for their own broadband or other transmission to make Skype or FWD calls.

[3] *Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services are Exempt from Access Charges, Order*, WC Docket No. 02-361, FCC 04-97 (April 21, 2004) ("*AT&T Declaratory Ruling*"), at ¶ 3 ("VoIP uses available bandwidth more efficiently than circuit-switched telephony and allows providers to maintain a single IP network for both voice and data.")

**VoIP can deliver dramatic consumer savings**
Because VoIP converts voice into Internet data and routes the data as packets like e-mail, a voice call takes up less transmission capacity – using up to 90% less bandwidth than a traditional PSTN call -- making VoIP calls less expensive and more efficient[4]. Taking advantage of these differences has enabled companies to offer phone-like services that cost as little as $29 a month for unlimited local and long distance calling. Experts estimate Internet telephony could save consumers between 40 percent and 60 percent on their phone bills.[5] Another study found that the average narrowband household could capture a net savings of $8 per month if they upgraded to broadband and began using a VoIP telephone service.[6]

In the United States, hundreds of thousands of immigrants use VoIP to dramatically lower the cost of communicating with friends and relatives outside of the United States, through either personal computer-based VoIP or VoIP used by prepaid calling card companies. Phone-to-gateway network configurations, such as those offered by Callipso, provide those without a computer or broadband service what is often their only access to the benefits of the Internet.

If international voice service is any guide, VoIP stands to spark new competition and further drive down consumer prices. Rates for international calls have dropped 80% over the last two decades. Much of that decline stems from cheap VoIP service carrying up to 12% of international calls[7].

**VoIP is cheaper to deploy too.**
VoIP networks are often based on software rather than hardware, which is easier to alter and maintain, and helps reduce operation costs. Some experts claim that installing a packet-switching network costs about a third of a circuit switching system and that one can save about 50-60% in operating costs.[8] The potential cost saving through converging voice and data applications in one network makes VoIP attractive for enterprises that have already deployed an IP network. Others report the savings are even greater. The Precursor group reports that a SIP softswitch is about *one-tenth* the cost of a circuit switch, on a one-for-one replacement basis[9]. With scale, they report it is roughly *one-thirtieth* the cost.

**VoIP provides innovative new features**
People are adopting VoIP not just because it offer enormous consumer savings, but because it also provides innovative new features such as the ability to access voicemail from your e-mail, to conference large groups of people together, to select which area code your telephone will use, or to use your phone extension anywhere there is an Internet connection.

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[4] http://www.fwcs.co.uk/voip.htm
[5] The Detroit *News Internet phone use grows: Less costly service is to be offered by major firms in '04* By Charles E. Ramirez , December 28, 2003
[6] Market research firm Parks Associates, study February 2004
[7] Internet Calling Posing A Threat To Landline Phone Companies, By Mike Angell Investors Business Daily 5/18/04 http://www.investors.com/editorial/general.asp?v=5/19
[8] Equipment manufacturer Sonus Networks estimates that installing a packet-switching network could be done for about a third the cost of a circuit switching system, and that operating savings could be 50 percent to 60 percent. New York Times, January 12 2004, http://www.nytimes.com/2004/01/12/technology/12phone.html?th=&pagewanted=print&position=
[9] Precursor Group, SIP "De-geograph-ies" Telecom: Transforms Central Office Assets into Liabilities, May 5, 2004

As Newsweek points out, using VoIP, "clever Web interfaces will let you convert your voicemail messages to email, or your emails to voice; you'll be able to call-forward in a myriad of ways, or switch to video or hi-fi voice if you want, or even agree to hear some number of commercials every day to lower your bill.[10]"

**VoIP is now being integrated into a variety of new applications like**[11]:

- A PDA that uses Wi-fi for voice
- A Webcam using VoIP for videoconferencing
- Instant messenger software converging voice, text and video chat
- A Wi-fi enabled badge that allows wearers to touch the device, say who they want to talk to and be connected – much like Star Trek.
- Game consoles that allow gamers with a headset to talk with each other during team-based games

**Consumers are getting innovative new features**, including:[12]

- **Web-based call logging** - Users check personal Web pages for detailed, up-to-the-minute listings of incoming and outgoing calls.

- **"Find me, follow me"** - Users program their phones to search for them when a call is not answered. A work phone, for example, would ring over to a cellphone if not answered. If that, too, went unanswered, the call might be forwarded again to a home phone or other number.

- **Do Not Disturb** - Instead of permitting the phone to ring at all hours, incoming calls can be sent directly to voice mail at scheduled times, eliminating calls during dinner, during a favorite TV show or after bedtime. (A work-around would still allow urgent calls to ring through.)

- **Digital voice mail** - Voice mail messages are converted to digital sound files that can be easily stored or e-mailed. Users might have voice mails from their home phone forwarded by e-mail to their desk at work.

- **A truly cordless phone** - VOIP phones can be plugged into any broadband connection, so users can take their home phone on vacation, on business trips, or while visiting friends and family.

- **Customized voice mail boxes** - Incoming calls can be routed to special voice mail boxes based on caller ID. Business clients might get one voice mail greeting; family members another.

**Consumers are excited about VoIP possibilities.** A recent survey found that three-quarters of adults have heard of VoIP – 4 times more than have heard of Wi-fi.[13] Approximately 2 of 3 believe VoIP will forever change how we communicate.

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[10] Newsweek, *Will Telephone calls be free?,* May 18, 2004 http://msnbc.msn.com/id/3730179/site/newsweek/

[11] Werbach testimony to FCC at VoIP hearing http://werbach.com/docs/FCC_VOIP.txt

[12] Cyberphones are no longer just for nerds, by John M. Moran -- Hartford Courant 05/31/2004

[13] According to an Ipsos-Insight Express study, commissioned and released by AT&T March 2, 2004, this was most evident in results that found 74 percent of the sampled population of 1,000 adults has heard of some form of VoIP. That percentage is approximately 4x the consumer awareness of Wi-Fi (19 percent), a popular wireless high-speed connection technology, and exceeds that of DSL (66 percent), a high-speed

In fact a majority of consumers believe VoIP's impact will be similar to digital music, flat screen TVs, and computer games. Further evidence suggests that consumers believe the technology will emerge rapidly. Nearly one in two consumers believe phone service will move to the Internet within two years (47 percent) and nearly one in four (23 percent) of those respondents believe it will happen this year. And even non-users are interested. Among current "non users" aware of VoIP services, 76 percent would consider actually implementing the service in the next year, depending on the price and package offering.

**VoIP Is Enabling Competition in New Kinds of Voice Services**

As a result of VoIP technological advances, VoIP providers and start-ups are charging into the Internet voice market at unprecedented rates. In fact, almost every major telecommunications provider now has plans to introduce Internet-based voice service to take advantage of the technology's lower costs, its capacity to deliver new innovative services, and ability to compete in the local phone market.

This may be just the beginning. Tomorrow almost anyone with a bright idea and access to the Internet can jump into the game. VoIP is enabling a host of new non-traditional competitors to enter the voice market which was once the sole purview of a incumbent telephone. Software, hardware, networking gear companies and innovators in their basements are now able to program new voice applications and become global voice providers with the reach of the Internet.

For consumers, the benefits of this independence are profound. With a broadband connection, consumers will be able to choose directly the type of services and the specific provider they want to deliver it independent of the incumbent broadband provider, and regardless of the type of services the incumbent has to offer.

**Internet voice is calling:**

- ✓ 2/3rds of Americans believe VoIP will forever change how we communicate.
- ✓ Consumer achieving savings of 40 to 60 percent off phone bills.
- ✓ VoIP equipment investment increasing as much as 50% in 2004.
- ✓ 30% of U.S. businesses plan to move to VoIP within the next two years.

**VoIP is Accelerating Investment in Innovation Infrastructure**

This Internet induced competition is real and the adoption curve is arching steeply skyward and breathing new life into the tech sector – helping increase investment in the Internet, the high-tech sector, network and service providers.

U.S. carriers spent an estimated $2 billion on VoIP equipment in 2003, an increase of approximately 10 percent from 2002.[14] In contrast, spending in the overall telecommunications equipment market declined by 20 percent in 2003. Investment in VoIP equipment is estimated to grow by 50 percent in 2004.[15] As the

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method to move data over phone lines. Nearly two thirds of the participating consumers (63 percent) would go so far as to say, 'VoIP will change the way they communicate.';66 percent suggested VoIP's impact on their lives will be similar to that of digital music; 58 percent compare it to computer games, and 57 percent a flat screen TV. www.att.com/presskit/voip.

[14] Steve Rosenbush, *Telecommunications: Strong Signals the Bad Times Are Over*, Business Week, January 12, 2004, at 100.

[15] Similarly, one study predicts that the market for all VoIP equipment, about $1 billion in 2002, is likely to reach almost $4.3 billion in 2006. *See Getting the Value From VOIP* (November 13, 2003) (available at:

telecommunications sector begins its recovery, VoIP will be essential to sustaining robust growth and investment.

**VoIP Is Increasing Broadband Penetration.** VoIP may be the long awaited "killer application" for driving broadband subscribership. There are already signs that consumers are flocking to broadband in order to take advantage of new broadband VoIP calling plans. The Yankee Group predicts that VoIP could spur new growth in untapped markets and enable entirely new business models. At present, only about 20 percent of Americans have subscribed to broadband.[16] Among those who do not have broadband, approximately 70 percent report that broadband is too expensive.[17] VoIP, however, can overcome price barriers by dispersing the cost across both products – voice and broadband. While broadband penetration rates currently drive VoIP adoption, VoIP could become the application to drive future broadband adoption.[18] One study estimates that widespread adoption of broadband could add $500 billion to the economy[19] and generate more than 1.2 million jobs.[20] In the next five years, the proliferation of VoIP services will create huge opportunities for consumers and even greater growth for broadband providers.

**VoIP Can Increase Productivity And Help Lift the Economy**

*"What differentiates this period from other periods in our history is the extraordinary role played by information and communication technologies. The effect of these technologies could rival and arguably even surpass the impact the telegraph had prior to, and just after, the Civil War."*
*-- Alan Greenspan, July 13, 2000*

While VoIP is driving new capital investment in both the Internet backbone and last mile, the biggest lift to the economy may come from major new productivity gains for companies. Productivity gains can in turn help lift the economy and overall standards of living. For example companies can become more efficient by deploying VoIP to help gain the benefits of telework and a distributed workforce.

- Dialing into a corporate IP PBX system can give home based workers and road warriors all of the features and benefits of the corporate VoIP network.
- By eliminating the commute, it provides workers with more hours and options for working.
- An IP PBX maintained at an emergency back-up site may mean the difference between business continuity and massive disruption during times of national or local emergency.
- Businesses are also finding they can connect remote offices and take a big bite out of the cost of keeping in touch with overseas divisions.
- VoIP also reduces operational costs because far fewer technicians are required to run and maintain a VoIP-based network.

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http://www.lightreading.com/document.asp?doc_id=42831&site=lightreading) (citing *Infonetics Research Inc., Next Gen Voice Quarterly Worldwide Market Share and Forecasts* (August 2003)).

[16] The Yankee Group, *VoIP: Influencers and Drivers in the Emerging Broadband Telephony Market* (April 22, 2004).

[17] *Id.*

[18] *Id.*

[19] Robert W. Crandall and Charles L. Jackson, *The $500 Billion Opportunity: The Potential Economic Benefit of Widespread Diffusion of Broadband Internet Access* (July 2001).

[20] Stephen B. Pociask, TeleNomic Research LLC, *Building a Nationwide Broadband Network: Speeding Job Growth* (February 25, 2002) (available at: http://www.newmillenniumresearch.org/event-02-25-2002/jobspaper.pdf).

VoIP providers with the ability to cut corporate phone bills in half are finding a receptive audience among corporate financial officers.

This convergence of voice and data now allows companies to distribute work in new ways and literally eliminate the walls that once limited organizations. As an example JetBlue, the low cost airline start-up, has set up a "virtual call center" where 700 reservation agents work from home and answer VoIP calls that integrate passenger data with a consumer voice call. It cuts commutes, eliminates the need for a costly physical space, and drives major productivity improvements. A workers commute is as quick as a mouse click for the reservation agents, who use special application software on a VoIP Softphone. The software connects them to the airline's Internet telephony switch, which routes customer reservations calls to them. These work from home agents will handle 9.6 million phone calls in 2003. As a result, JetBlue's call-center attrition rate is just 5%, vs. 30% industrywide. That's helping JetBlue earn industry-leading profit margins of 19%. "They're a happier, more motivated, more loyal workforce," says CEO David G. Neeleman.[21]

Companies such as Dell and American Express currently are using VoIP in their call centers[22]. A recent report by In-Stat/MDR reported that at the end of 2002, 46.3 percent of enterprise phone stations sold in the United States were Internet protocol-based. It means that all businesses - small, medium and large - are tapping into VoIP to help decrease costs, increase efficiency and provide a better means of communicating. It is precisely the kind of technology that can drive the next generation of workplace productivity improvements.

**VoIP Can Also Deliver Benefits to Specific Communities:**

***Emergency Services***. VoIP is also able to deliver advanced emergency services, such as the ability to deliver reverse 911 and to conference in rescue workers on the way to an emergency scene.

> ***"The 911 system is vital in our country, but it is limited functionally. In most systems, it primarily identifies the location from which the call was made. But an Internet voice system can do more. It can make it easier to pinpoint the specific location of the caller in a large building. It might also hail your doctor, and send a text or Instant Message alert to your spouse."***
>
> **-- FCC Chairman Michael Powell**

Some local governments are already using VoIP to deliver advanced emergency benefits. For example, Herndon, Virginia is using a VoIP system that automatically displays a picture of a missing child and possible suspects to VoIP phones equipped with special screens used by municipal workers.[23] Moreover, the Department of Commerce has combined its voice system with its emergency broadcast system, creating a reverse 911 system whereby users are contacted in the case of an emergency.[24] Eventually, IP networks will allow Public Safety Answering Points

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[21] Business Week, 8-25-03

[22] Using the Web to make calls -- Quad-City Business Journal (IA) 05/31/2004

[23] *Net Phones Start Ringing Up Customers*, Business Week, December 29, 2003, at 45.

[24] William Jackson, "*With VoIP, Digital Department Comes of Age at Commerce*" (available at: https://secure.cio.noaa.gov/hpcc/docita/files/with_voip_digital_department_comes_of_age_at_commerce_09162003.pdf).

(PSAPs) to lower costs and to move more quickly in the event of an emergency.[25] Moreover, an IP-enabled PSAP will be better equipped to handle multimedia information and better respond to people with disabilities who may rely upon text- or video-enabled signing to communicate in an emergency.

***Rural America***. IP-enabled services are also benefiting rural America. One of the goals of universal service is to provide affordable voice communications to rural America, and no technology offers more promise for achieving this goal than VoIP.[26] Experts estimate Internet telephony could save consumers between 40 percent and 60 percent on their phone bills.[27] Moreover, VoIP is the application that will drive broadband deployment, including in rural America where access to broadband lags behind the rest of the nation.

***Disabled Persons***. IP-enabled services are also providing new opportunities for the disabled. The National Federation of the Blind uses IP-based phone services to provide a free newspaper reading service that uses voice synthesis to allow users to change voice speed and to search for words.[28] Avaya has just released a program that allows the functionality of a phone to be accessible to the blind without requiring any changes to the phone.[29] Blind employees at the Department of Education use IP communications to check e-mail remotely through the Department's voicemail system.[30] Trace Center and Gallaudet University are currently working with Cisco on a technique that would allow every phone within the organization to be instantly capable of text communication simply by installing a software program on the call manager server. This enables a deaf person to communicate in text (or in text and voice) without needing any special equipment and without changing the software on the phones.[31] The Washington School for the Deaf in Vancouver, Washington has used IP communications to afford equal access to communications services to deaf, hard-of-hearing, and hearing employees alike.[32]

***Government***. The federal government itself is adopting VoIP to achieve a wide variety of cost saving and service benefits. The Department of Commerce, Food and Drug Administration, Census Bureau,

***People around the world are benefiting.*** Baghdad resident Usama Kamil Al-Sharqi is using using an Internet telephony feature built into instant messaging software to make phone calls from Baghdad Internet cafes that charge around $1 per hour for connect time, versus a going rate of about $1 per minute for long distance telephone service. (Washington Post)

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[25] *Testimony of Professor Henning Schulzrinne, Department of Computer Science, Columbia University at FCC's Internet Policy Working Group E911 Solutions Summit* (March 18, 2004) (available at: http://www.fcc.gov/ipwg/E911SummitHenning.pps).

[26] *Testimony of Tom Evslin, CEO, ITXC, at FCC's VoIP Forum* (December 1, 2003) (available at: http://www.fcc.gov/voip/voipforum.html).

[27] Charles E. Ramirez, *Internet Phone Use Grows: Less Costly Service Is to be Offered by Major Firms in* '04, Detroit News, December 28, 2003.

[28] *Free Service to Those Who Cannot Read Regular Newsprint*! (available at: http://www.nfb.org/newsline1.htm); *see also* USA Datanet Corporation *ex-parte*, WC Docket No. 02-361 (February 2, 2004).

[29] Gregg C Vanderheiden Ph.D, *Access to Voice over Internet Protocol* (December 2003) (available at: http://www.tracecenter.org/docs/2003-NMRC-VoIP-Access/).

[30] News Release, *Cisco IP Communications System Improves Productivity for Disabled at Washington School for the Deaf and U.S. Department of Education (available at: http://newsroom.cisco.com/dlls/2004/prod_020904c.html).*

[31] Gregg C Vanderheiden Ph.D, *Access to Voice over Internet Protocol* (December 2003) (available at: http://www.tracecenter.org/docs/2003-NMRC-VoIP-Access/).

[32] News Release, *Cisco IP Communications System Improves Productivity for Disabled at Washington School for the Deaf and U.S. Department of Education (available at: http://newsroom.cisco.com/dlls/2004/prod_020904c.html).*

Environmental Protection Agency, Department of Defense, and Peace Corps, among other governmental entities, use some form of VoIP technology.[33] One study suggests that governments at all levels could save as much as $3-10 billion by using VoIP.[34]

***International.*** Perhaps the most dramatic impact of IP-enabled services has been in certain foreign markets, where VoIP has been a leading force for lowering costs to consumers, increasing competition, and increasing deployment of broadband. According to Telegeography, international VoIP traffic increased by 80 percent to 18.7 billion minutes, and comprised approximately 10.8 percent of all international call traffic.[35] At the same time, rates for international calls have dropped 80% over the last two decades. Much of that decline stems from cheap VoIP service carrying up to 12% of international calls[36]. VON Coalition members have persuasively invoked the United States regulatory model in lobbying overseas governments, such that in former monopoly markets the first steps toward deregulation have included implementing low-cost VoIP.

**Growth of VoIP and IP-Based Services**

While IP-enabled services offer great promise, they are still in the nascent stages of development. The deployment of IP-enabled services, for example, has not had significant impact on the revenue of traditional, domestic, circuit-switched telephone companies. The use of VoIP by phone, in the enterprise setting, and by broadband consumers is not coming at the expense of phone company revenues. Moreover, IP-enabled services have not been demonstrated to have a significant impact on universal service or access charge revenues.

One factor contributing to this minimal impact is the current penetration rate for VoIP. While the number of Internet-based phone lines is projected to grow from well under a million in 2002 to more than 5 million by the end of 2004,[37] this represents a tiny fraction of the 113 million households where the traditional phone line will still be the primary line. Given that only approximately 60 percent of American households own PCs[38] and only 20 percent have access to broadband,[39] the number of people who can take full advantage of broadband-enabled VoIP applications is still limited.

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[33] PlanetGov, *Multiservice/Convergence Technologies* (available at: http://www.planetgov.com/ns/consulting/solcontech.htm).

[34] *Government Could Save $3-10 Billion with VoIP, Study Says* (available at: http://www.forrelease.com/D20040211/nyw195.P1.02112004183814.23019.html) (citing study by Alexis de Tocqueville Institution).

[35] *NPRM* at n.34 (citing *Telegeography 2004*).

[36] Internet Calling Posing A Threat To Landline Phone Companies, By Mike Angell Investors Business Daily 5/18/04 http://www.investors.com/editorial/general.asp?v=5/19

[37] *Net Phones Start Ringing Up Customers*, Business Week, December 29, 2003, at 45 (citing study by Adventis Corp.).

[38] Jane Weaver, *Saying 'No Thanks' to the Internet: Online Growth in U.S. Flattens as Some Simply Opt Out* (April 16, 2004) (available at: http://msnbc.msn.com/id/3078958/); *NTIA, A Nation Online: How Americans are Expanding their Use of the Internet: a February 2002 Joint Study by the U.S. Economics and Statistics Administration and the National Telecommunications and Information Administration* (February 2002) (available at: http://www.ntia.doc.gov/ntiahome/dn/).

[39] Instate/MDR, *Reaching Critical Mass: The US Broadband Market* (March 2004) (available at www.instat.com).

**"Hands-Off" Regulatory Approach to IP-Enabled Services**

The growth of VoIP services has been propelled in part by the U.S. Government's "hands-off" regulatory approach. The hands off approach to Internet regulation has been an enormous success making the U.S. a leader in the development of VoIP and providing an influential policy model that has been emulated by many other countries. Since the inception of voice over the Internet, the FCC, states and Congress have consistently declined to regulate. The FCC articulated its policy in its 1998 *Universal Service Report to Congress*, which discusses various scenarios for what it called "IP telephony."[40] The *Report to Congress* discusses the difficulty of categorizing VoIP and the extent to which many of its deployments have characteristics of unregulated, information services.[41] As a result, the FCC expressly deferred any definitive pronouncements regarding VoIP, including phone-to-phone VoIP. As the FCC explained, "[w]e recognize that new Internet-based services are emerging, and that our application of statutory terms must take into account such technological developments. . . . We do not believe . . . that it is appropriate to make any definitive pronouncements [regarding VoIP] in the absence of a more complete record focused on individual service offerings."

**Congressional "hands off" mandate:**
47 USC 230(b)(2)
"(b) It is the policy of the United States

(2) to preserve the vibrant and competitive free market that presently exists for the Internet ... unfettered by Federal and State regulation;"

Attempting to classify the dizzying array of IP-enabled services into statutory boxes is a Herculean task that would take arbitrary line-drawing that policymakers should avoid. As the FCC explained in a 1999 Working Paper, "[a]s more services are offered that use the Internet Protocol in a packet-switched environment, it becomes increasingly difficult to determine where the telecommunications service ends and the information service begins."[42] This statement is no less true today. IP-enabled services include a wide variety of network architectures, technologies, and applications. IP traffic travels as indistinguishable packets of digital bits, thereby blurring the lines between traditional services and categories.

**An Inability to Force VoIP into Existing Regulatory boxes**

The borderless nature of the Internet, and the inability to distinguish and regulate one bit differently from another, makes Internet communications a difficult thing to

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[40] *Federal-State Joint Board on Universal Service,* Report to Congress, 13 FCC Rcd 11501, ¶¶ 83-93, 98 (1998) (*"Report to Congress"*) (also referred to as the "Stevens Report"). The *Report to Congress* addressed many of the issues raised in a 1996 petition for rulemaking asking that IP telephony software and hardware providers be classified as common carriers. *Id.* at ¶ 83 n.172; *see America's Carriers Telecommunications Association, Provision of Interstate and International Interexchange Telecommunications Service via the "Internet" by Non-Tariffed, Uncertified Entities, Petition for Declaratory Ruling, Special Relief, and Institution of a Rulemaking,* RM-8775 (filed March 4, 1996).

[41] As noted in a 1999 Commission Working Paper, "[a]s more services are offered that use the Internet Protocol in a packet-switched environment, it becomes increasingly difficult to determine where the telecommunications service ends and the information service begins." Jason Oxman, *The FCC and the Unregulation of the Internet*, OPP Working Paper No. 31, at 22. "Despite this difficulty, however, it remains important for the FCC to maintain the unregulated status of data services offered over telecommunications facilities." *Id.*

[42] Jason Oxman, *The FCC and the Unregulation of the Internet*, OPP Working Paper No. 31, at 22.

define, let alone regulate – especially in a technology that is constantly evolving. Ultimately, as networks move to an all IP-based world, all instant-messaging, video-conferencing, e-mail, IP television, and other technologies that utilize Internet communications are likely to have a VoIP component. The regulatory treatment decided today will have a dramatic impact on how these future technologies will emerge.

**Exclusive Federal Jurisdiction Avoids 50 Different Regulatory Treatments**
VoIP is interstate in nature and thus should be subject exclusively to federal jurisdiction. One of the inherent characteristics of IP-enabled services, and one of its advantages, is that it is entirely geographically neutral. There is no dedicated transmission facility required, there are no facilities required to be located locally. Internet traffic can travel anywhere in the world with no material difference in cost, and facilities which act on the call can be located anywhere.[43] Moreover, there is currently no method to identify or distinguish IP-voice from other IP traffic, or to determine the jurisdictional nature of the traffic. If VoIP were subject to state regulation, it would have to satisfy the requirements of more than 50 state and other jurisdictions with more than 50 different certification, tariffing and other regulatory obligations. Additional state regulation would eliminate any benefit of using the Internet to provide voice service. Certainly, this is kind of impact Congress considered when it made clear statements about leaving the Internet and interactive computer services free of unnecessary federal and state regulation.

**Policy Goals Can Best Be Accomplished Through Voluntary And Other Efforts**
There are important social policy issues where the FCC and state regulators have a legitimate role. But these issues can be more effectively addressed without imposing heavy handed legacy telephone regulations to innovative Internet voice communications.

Two examples:

- **911 Emergency Services.** The VON Coalition supports efforts to address critical issues like the availability of 911 emergency services through voluntary and other efforts that that don't require imposing heavy regulation that could stifle voice innovations. To advance these solutions, in December 2003 the VON Coalition joined with the National Emergency Number Association (NENA) to bring together leaders from the VoIP industry to forge a voluntary agreement on the next steps to develop the technical and operational mechanisms for providing effective access to emergency services by users of VoIP. NENA and members of the VoIP industry agreed on a set of key elements for providing E911 to VoIP users.[44]
- **Disability Access.** The IP-enabled services industry has also undertaken voluntary efforts to ensure that persons with disabilities are provided access to IP services. For example, the IP-enabled services industry has worked to develop and implement technology that is interoperable with TTY devices. The deployment of Internet

[43] *NPRM* ¶ 4 ("Packets routed across a global network with multiple access points defy jurisdictional boundaries.").

[44] *See Press Release, Public Safety and Internet Leaders Connect on 9-1-1* (December 1, 2003) (available at: http://www.nena.org/NENAVONVOIP%20press%20release%20FINAL%20112603.pdf).

enabled services has already had positive implications for access to communications by the hearing impaired. For instance, video relay service, an Internet-based video interpreting service for the deaf, now offers callers options involving web cameras for sign language.

**Existing Economic Subsidy Mechanisms Must Be Reformed**

Today's universal service system and inter-carrier compensation regime are in dire need of reform. The FCC needs to first reform these existing regulatory frameworks before considering whether and how they should apply to VoIP.

- ***Universal Service Reform.*** In today's economy, it is more important than ever that consumers in rural areas have access to affordable communications services and innovative new technologies regardless of where they live. The VON Coalition has long supported the goals of the universal service program. Even under the current USF regime, VoIP providers contribute to universal service either directly or indirectly. When an information service provider purchases an underlying telecommunications input, this generates indirect contributions to universal service support mechanisms.

  The VON Coalition believes that VoIP already meet the goals of universal service and need not be subject to these regulatory regimes. But before the Commission even considers whether to impose these requirements on VoIP, the FCC must first reform the existing regulatory frameworks. The VON Coalition is committed to bolstering and reforming universal service in a way that puts universal service on a more solid financial footing going forward and supports a numbers or connections based approach. A numbers- or connections-based contribution mechanism would better ensure the continued sustainability of the Universal Service Fund than any attempt simply to include IP-enabled and other information services in the current revenue-based mechanism.

- ***Inter-Carrier Compensation Reform.*** As for inter-carrier compensation, the Commission should move away from a hodgepodge of implicit subsidies and towards a rational series of voluntary inter-carrier business arrangements.[45] It's a broken system in need of reform. Applying a broken system to new technologies could stifle innovation and consumer benefits. Applying access charges on any class of VoIP service is unnecessary because incumbent phone companies are already fully compensated for their costs when Internet phone calls are terminated on their networks. When a phone company terminates VoIP services on its network, the phone company receives either reciprocal compensation and/or local end-user business line rates – in either case fully compensating them for the cost of the network. At the federal level, Congress has required the FCC to eliminate inefficient implicit subsidies from interstate access charges.[46] Rather than imposing legacy access charges adopted for a 100 year old telephone

[45] The impact of VoIP on access charges revenue is minimized by current rules governing access charges that accommodate ISP usage. Under an access charge exemption dating to the 1980's, ISPs compensate local exchange carriers through the purchase of business lines, not switched access.

[46] Chairman Powell recently remarked that "We must make all implicit subsidies explicit to ensure continued high-quality, affordable service and network investment. To that end, I applaud those states that have undertaken efforts to adjust retail rate structures and intra-state access charges." *Remarks of Michael K. Powell, Chairman, FCC, at the National Association of Regulatory Commissioners General Assembly*, Washington, DC (March 10, 2004) (available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-244737A1.doc).

network on innovative Internet communications services, the Commission should overhaul the current access charge regime.[47] "Bill and keep" may well turn out to be an effective arrangement as it has been in much of the IP world.

## Conclusion

VOIP is one of the most significant advancements in communications since the arrival of e-mail. The potential for a vast new wave of VoIP-led technological innovation is here. It has the potential for speeding investment, innovations and economic growth. It can deliver greater choices, lower costs, higher broadband demand, and innovative new services. In order to unlock these vast new benefits, policymakers need to help overcome a set of emerging policy challenges and nurture future innovation. Policymakers need only maintain their successful hands off approach to regulating the Internet for all forms of VoIP.

**About the VON Coalition:**
The VON Coalition consists of leading VoIP companies, on the cutting edge of developing and delivering voice innovations over Internet. The coalition, which includes AT&T, BMX, Callipso, CallSmart, Convedia, Covad, IceNet, iBasis, Intel, Intrado, MCI, Microsoft, PointOne, Pulver.com, Skype, TeleGlobe, Texas Instruments, VocalData, and Voiceglo, believe that American's are fundamentally better off with a generally hands off regulatory approach to Internet and Internet based services like VoIP. Since its inception, the VON Coalition has consistently advocated that federal and state regulators maintain current policies of refraining from extending legacy regulations to Internet services, including VoIP. More information about the VON Coalition can be obtained at the following website: http://www.von.org or by calling Jim Kohlenberger at (703) 237-2357.

[47] In 2001, the Commission initiated a proceeding to revise the intercarrier compensation regime. *Developing a Unified Intercarrier Compensation Regime, Notice of Proposed Rulemaking*, 16 FCC Rcd 9610 (2001).

The longstanding U.S. policy of "hands off the Internet," has been emulated by governments everywhere and has been an enormous success. VoIP is a force for increased competition, a platform for innovation, and a driver of broadband deployment.

> *"I believe that IP-based services such as VOIP should evolve in a regulation-free zone. No regulator, either federal or state, should tread into this area without an absolutely compelling justification for doing so."*
>
> -- FCC Chairman, Michael Powell

**The best public policy is to refrain from applying traditional telecom regulation to VoIP and to affirmatively create a national policy vision that ensures that traditional telecom regulation does not apply to Internet voice communications throughout the country.**

While members of this coalition have different views on how much market power some facilities-based telecom providers have, we all agree that policies should be continued that permit entities that do not have significant market power to deploy voice over IP free from traditional telecom regulation.

The Coalition freely concedes that there are important social policy issues where the FCC and state regulators have a legitimate role. The VoIP community is prepared to work constructively on such issues, including providing access to those with disabilities, access to emergency services, cooperation with law enforcement, secure funding for universal service, and reform of inter-carrier compensation. These legitimate concerns can be addressed without imposing heavy regulation on VoIP and that if they are addressed successfully the pressure to regulate VoIP will dissipate. The coalition supports efforts to address these issues including:

- **Emergency Services.** VoIP industry representatives have been working with the National Emergency Number Association's ("NENA's") VoIP/Packet Technical Committee and VoIP Operations Committee to assess the current state of 911 provisioning in VoIP environments and to develop 911 solutions. There are important differences between the provision of 911 for traditional PSTN traffic and for VoIP, but there is every reason to expect that technical solutions exist to provide users with reliable access to public safety services. NENA and representatives of the VoIP industry recently reached a voluntary agreement on the next steps to develop the technical and operational mechanisms for providing effective access to emergency services by users of VoIP.

- **Law Enforcement.** Voluntary efforts also are underway with respect to compliance with CALEA, the statute that addresses cooperation with law enforcement. Packet-switched technology poses unique technical issues, but manufacturers and providers of VoIP are moving ahead to implement compliance capabilities into their systems. Moreover, CALEA has a different definition of telecommunications than the Communications Act, so there is no need to define VoIP as telecommunications for Communications Act purposes in order to mandate that VoIP manufacturers and service providers cooperate with law enforcement.

- **Universal Service.** As for universal service, of course, VoIP providers directly or indirectly already contribute to USF. The fact that more and more calls, including wireless and business calls made on modal access as well as some VoIP calls, don't contribute or contribute unevenly to USF should not be an excuse for regulation of all these modes. Instead, what is needed is reform of funding for explicit USF. We believe that a numbers-based contribution mechanism would better ensure the continued sustainability of USF than any attempt simply to include VoIP or other information services in the current revenue-based mechanism. If one of the goals of universal service is to provide affordable voice communications to rural America, then no technology offers more promise for providing more affordable communications, not only to rural America, but to all of America.

- **Inter-carrier compensation.** We urge the FCC to move away from a hodgepodge of implicit subsidies and towards a rational series of voluntary inter-carrier business arrangements with regulation required only when there is effective monopoly ownership of a bottleneck. "Bill and keep" may well turn out to be an effective arrangement as it has been in much of the IP world.

- **Phone-to-Phone VoIP Regulation.** One suggestion that has been made is that phone-to-phone Voice over IP be regulated while "other" VoIP is not. This would be a mistake even if it were possible and it is, in fact, impossible to define today what is a phone. It is phone-to-phone traffic which has funded and continues to fund the buildout of a worldwide network of interfaces between the PSTN and the Internet around the world. These interfaces are necessary so that VoIP phone and voice PBXes can connect with the TDM world and vice versa. It is the existence of these networks of traffic exchange points which are making possible the deployment of innovative new VoIP services because the users of these services have full connectivity to the TDM world – not just to other VoIP users.

- **State Role.** We also don't deny that there is a legitimate role for state governments, but that role has to be defined in a way that is consistent with the interstate nature of the Internet and the practical problems that would be caused by varying state regulation.

- **FCC Role.** We believe that the FCC has the legal authority to continue to keep its hands off the Internet and IP networks even when they are used for voice applications. Voice over IP should be classified as an information service and regulated only to the extent necessary pursuant to the Commission's Title I or ancillary jurisdiction.

**VoIP providers shouldn't be regulated like phone companies with large market power.** The historic reason for telephony regulation was the existence of monopoly providers and an infrastructure which made it nearly impossible to challenge such monopolies even in the rare case where it was legal to do so. In contrast, a provider of a VoIP service has no need to own or build the infrastructure on which the service is delivered and, since there are no historic or even nascent VoIP monopolies, there is simply no basis for regulation of any such provider that does not have significant market power.

| Von Coalition Members | | | |
|---|---|---|---|
| AT&T | **AT&T** provides a residential broadband Internet voice service called CallVantage. AT&T also provides enterprise IP Services as well as phone based VoIP services. http://www.att.com/ | MCI | **MCI**, with headquarters in Ashburn, VA, is a leading provider of global communications services and operates an expansive IP backbone. http://www.mci.com |
| BMX | **BMX**, based in New York, is a competitive provider of call center applications using Internet-based telecommunications services. http://www.bmx-inc.com/ | Microsoft | **Microsoft**, based in Redmond Washington, is a leading VoIP innovator for software, embedded systems, devices and enterprise applications. http://www.microsoft.com/ |
| Callipso | **Callipso** provides enhanced IP services to telecommunications carriers, enterprises and the prepaid card market. It is based in Santa Ana, CA. http://www.callipso.com/ | POINTONE | **PointOne** is a VoIP network provider and offers IP communications services to the provider community. It is based in Austin, TX. http://www.pointone.com/ |
| CallSmart | **CallSmart** is a North Dakota company that is taking advantage of the latest Voice over Internet (VoIP) technology to provide an alternative to traditional long distance voice service. http://getcallsmart.com/ | pulver.com | **Pulver.com**, based in Melville, New York, is an early VoIP innovator and offers the Free World Dialup service which provides consumers Free Telephony over Broadband. http://www.pulver.com/ |
| CONVEDIA | **Convedia** Corporation is based in Vancouver, Canada. It is a supplier of next-generation IP media services. http://www.convedia.com/ | skype | **Skype** is a Global P2P Telephony Company that is offering consumers free, superior-quality calling worldwide. http://www.skype.com/ |
| COVAD | **Covad**, based in San Jose California, is a leading national broadband service provider of high-speed Internet and network access utilizing Digital Subscriber Line (DSL) technology. http://www.covad.com/ | TELEGLOBE | **TeleGlobe** is a leading provider of international voice, wireless roaming and data/IP services. http://www.teleglobe.com |
| iBasis | **iBasis,** based in Burlington, MA provides wholesale international telecommunications services, and has carried more than 6 billion minutes of international voice traffic. http://www.ibasis.com/ | TEXAS INSTRUMENTS | **Texas Instruments** of Dallas, TX is a leader in digital signal processing and analog technologies to meet signal processing requirements and support the development of IP telephony. http://www.ti.com/ |
| IceNet | **IceNet** of Dallas, TX, provides VoIP infrastructure to VoIP Application Service Providers and Broadband Providers for enhanced local, long distance, toll-free and DID services. http://www.myicenet.com/ | VocalData | **VocalData**, based in Richardson, Texas, provides hosted IP telephony applications that enable service providers to reliably and cost-effectively deliver voice-over-IP solutions. http://www.vocaldata.com/ |
| intel | **Intel** is the world's largest chip maker. Based in Santa Clara, CA, it also manufactures computer, networking and communications products. http://www.intel.com/ | voiceglo | **VoiceGlo**, headquartered in Fort Lauderdale, Fla, is a global, full-service Voice over Internet Protocol (VoIP) communications company. http://www.voiceglo.com/ |
| intrado | **Intrado**, based in Longmont, CO., provides emergency service solutions to Enable VoIP 9-1-1 calls, to the public safety and telecommunications industries. http://www.intrado.com/ | | |

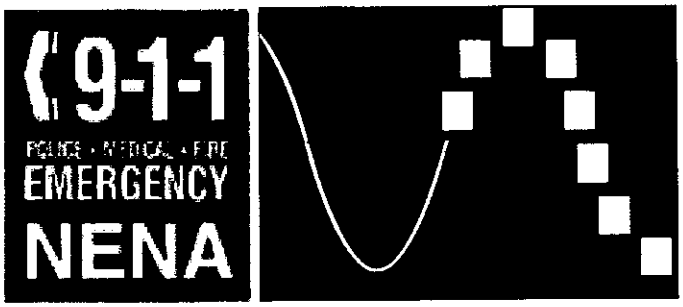
# Voice on the Net Coalition

*The voice for Internet voice innovation and the policy framework that enables it*

# 9-1-1

## ANSWERING THE CALL FOR 9-1-1 EMERGENCY SERVICES IN AN INTERNET WORLD

*A 9-1-1 VoIP Primer and Progress Report on the VON/NENA Agreement*



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*Voice On the Net (VON) Coalition/NENA 9-1-1 Working Group*

The nation's most important phone number is 9-1-1. Every day millions of Americans dial and rely upon 9-1-1 at a time of their greatest need. As more and more American's embrace Internet voice communications or VoIP, the Voice on the Net Coalition is working with emergency service leaders to ensure that a 9-1-1 call placed over the Internet can quickly summon the police, fire, and/or medical response in an emergency.

When people replace their primary phone line with a VoIP service, VoIP needs to be able to deliver not only conversation, but emergency services as well. Customers need the security of knowing that when they dial 9-1-1 from a VoIP line, their call will be routed for emergency response.

Today, Voice over the Internet Protocol (VoIP) not only provides users with the ability to place a telephone call over a high speed broadband connection, it is fundamentally transforming the way we communicate. VoIP has the potential to deliver new innovations and more affordable ways to communicate. It can also be a force for increased competition, a platform for innovation, a driver of broadband deployment, and an enabler of economic growth. But it can and should also be a driver in helping us move to an even more capable emergency response system for the future.

[redacted]

Because VoIP uses entirely new technologies, it enables many technical advantages that require re-thinking of the traditional emergency calling architecture. Traditional 9-1-1 services, built on a 40 year-old architecture, have done a great job of ensuring emergency access in that world, but traditional 9-1-1 service is limited in its functionality and not technologically set up to handle the mobility or innovative features that Internet based calling provides.

IP-enabled services create new challenges for providing emergency services under today's system, this innovative technology also offers an opportunity to improve the working of emergency calling technology, while potentially lowering its operating cost and reducing its complexity.

In order to remain true to the vital public safety foundations upon which 9-1-1 is built, consumers need solutions that allow them to reach emergency assistance regardless of the technology or protocol of the device used to make the request. It is imperative that 9-1-1 adapt to the public's changing methods of communication.

In 1999 Congress addressed the changing methods of communication by formally recognizing 9-1-1 as 'the universal number' for emergency calling by enacting the "The Wireless Public Safety Act of 1999." Five years later and with an eye to further innovation, Congress passed and President Bush signed into law "The ENHANCE 911 Act of 2004." The recently enacted 2004 Act establishes a National 9-1-1 Program Office to

improve the deployment of Enhanced 9-1-1 services and new expectations for improving our nation's 9-1-1 system.

For the last twenty-two years, the National Emergency Number Association (NENA), the nation's leading 9-1-1 organization has been hard at work to build a foundation for greater 9-1-1 capabilities and services including the ability to locate an emergency caller from any device, at anytime and from everywhere.

## [redacted]

The Voice on the Net (VON) Coalition, the leading voice on VoIP policy issues in the United States, andNENA have come together to forge a landmark agreement to find workable 9-1-1 solutions for VoIP.

As early as August of 2003, NENA began working with the IP community on an E9-1-1 system design based on IP technology, as an extension of the NENA E9-1-1 Future Path Plan developed in 2001. In December of 2003, the VON Coalition and NENA joined forces to lay out a vision of collaboration and consensus in which the public safety community works with industry to accelerate the abilities of new services, technologies and devices to handle 9-1-1 calls in times of an emergency. These companies and organizations are helping to identify 9-1-1 solutions for VoIP applications for stationary service offerings as well as "nomadic" services.

In developing the agreement, the VON Coalition, NENA, and the signatory companies embraced a three-stage pathway forward that includes:

1) Ensuring that when 9-1-1 is dialed today by residential or retail end users, it is routed to the designated Public Safety Answering Point (PSAP) for response
2) Extending the functionality of today's 9-1-1 system – including automatic location and call-back number – even for nomadic VoIP applications by developing new technical and operational requirements
3) Developing an even more advanced emergency response system for tomorrow, capable of delivering a host of breakthrough improvements in emergency application technologies, by migrating to an IP enabled emergency response system

Companies that signed onto the agreement -- including 8 X 8, AT&T Consumer Services, Broadsoft, Dialpad, ITXC (now TeleGlobe), Level 3, PointOne, Pulver.com, Vonage, and Webley – identified six key points for making progress including the implementation of the two interim 9-1-1 solutions outlined in 1 and 2 above, informing local emergency centers when they do, supporting continued funding for 9-1-1, and informing consumers about service shortcomings.

The VON Coalition and NENA established the VON/NENA 9-1-1 Working Group in 2004 to help implement and make progress on the six key areas covered by this voluntary agreement. Since the agreement was first developed in December 2003, progress has been made in all six key areas (see Appendix B for progress update.) And to speed the availability of effective 9-1-1 for VoIP users, VoIP leaders have stepped forward deploying interim 9-1-1 technological solutions and in some cases even deploying more advanced solutions comparable with traditional 9-1-1 functionality. Just a year after the agreement was signed, VoIP providers have begun to provide residential VoIP

customers the kind of location and callback functionality that took the wireless community 16 years to develop and deploy.[1]

Based on a survey of signatory companies who provide a residential retail VoIP replacement phone service, 100% ensure that when 9-1-1 is dialed, it gets routed to a designated PSAP. Ahead of expectations, 50% of signators who provide a residential VoIP replacement phone service are already providing an E9-1-1 service comparable to traditional fixed wireline service, and the rest either expect to within the year (33%), or do so as the next generation (I2) service is developed (17%.) And 75% of those who offer a residential retail VoIP replacement phone service are also collecting and remitting state and local 9-1-1 fees for VoIP customers, while 25% indicate they will as they get essential trunk and database access.

**NENA/VON Coalition 9-1-1 VoIP Agreement:**
NENA and the companies have agreed upon the following action items:

- **Ensure 9-1-1 Calls Reach Emergency Responders (I1).** For service to customers using phones that have the functionality and appearance of conventional telephones, 9-1-1 emergency services access will be provided (at least routing to a Public Safety Access Point (PSAP) 10-digit number) within a reasonable time (three to six months), and prior to that time inform customers of the lack of such access.
- **Work Directly With PSAPs in a Region.** When a communications provider begins selling in a particular area, it should discuss with the local PSAPs or their coordinator the approach to providing access. This obligation does not apply to any "roaming" by customers.
- **Work Towards 9-1-1 Solutions Using Existing 9-1-1 network (I2).** Support for current NENA and industry work towards an interim solution that includes (a) delivery of 9-1-1 call through the existing 9-1-1 network, (b) providing callback number to the PSAP, and (c) in some cases, initial location information.
- **Support Advanced Future 9-1-1 Solutions and IP-Enabled PSAPs (I3).** Support for current NENA and industry work towards long-term solutions that include (a) delivery of 9-1-1 calls to the proper PSAP, (b) providing callback number/recontact information to the PSAP, (c) providing location of callers and (d) PSAPs having direct IP connectivity.
- **Support 9-1-1 Funding.** Support for an administrative approach to maintaining funding of 9-1-1 resources at a level equivalent to those generated by current or evolving funding processes.
- **Educate Consumers About VoIP 9-1-1 Capabilities.** Development of consumer education projects involving various industry participants and NENA public education committee members to create suggested materials so that consumers are fully aware of 9-1-1 capabilities and issues.

To more fully understand the standards and technologies necessary to ensure the future, it is best to start from the standpoint of the traditional 9-1-1 call.

[1] See NENA's wireless 9-1-1 overview at http://www.nena.org/wireless9-1-1/overview.htm It took 16 years from the time cell phones were first introduced until October 1, 2001 when wireless providers were first required to begin making E9-1-1 capable service available including selective routing ANI and ALI. Wireless E9-1-1's FCC Deadline is December 31, 2005. http://www.fcc.gov/9-1-1/enhanced/ At the same time, not all PSAPs are yet capable of handling the information. By contrast, some VoIP providers are already entering the market with ALI capable E-9-1-1 services within the first year of offering services. See Appendix A for a description of the capabilities that VoIP leaders are offering